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LIST OF WRITINGS ON BRYOPHYTES BY REV. E. J. HILL*

AGNES CHASE

1. *Fissidens grandifrons*, its Habits and Propagation. BRYOLOGIST **5:** 56. 1902.
2. Branched Paraphyses of *Bryum roseum*. BRYOLOGIST **6:** 80. 1903.
3. *Encalypta procera* Bruch. BRYOLOGIST **8:** 107. 1905.
4. The Validity of some Species of *Fissidens*. BRYOLOGIST **10:** 67. 1907.
5. Note on *Amblystegium noterophilum*. BRYOLOGIST **12:** 108. 1909.
6. Charles R. Barnes and Julius Röll's Collection of Mosses in North America. BRYOLOGIST **13:** 105. 1910.
7. Notes on *Lepidozia setacea*. BRYOLOGIST **15:** 44. 1912.
8. The Annulus of *Tortella caespitosa*. BRYOLOGIST **16:** 17. 1913.
9. Notes on the Distribution of *Polytrichum strictum* and some associated Sphagna. BRYOLOGIST **17:** 63. 1914.
10. *Fontinalis Umbachii* Cardot. BRYOLOGIST **18:** 10. 1915.
11. Notes on *Funaria*. BRYOLOGIST **19:** 35. 1916.
12. *Fossombronia crispula* in the Dune Region of Indiana. BRYOLOGIST **19:** 67. 1916.

WASHINGTON, D. C.

NOTES ON THE HEPATICAE OF MT. KTAADN

ANNIE LORENZ

Mt. Ktaadn's *massif* was fairly well explored for mosses by Messrs. Kennedy and Collins during their expedition of July, 1900. For the extremely interesting illustrated account of this expedition the reader is referred to *Rhodora* for June, 1901. It was this report which first aroused the writer's desire to visit the mountain, and the opportunity offered by the Appalachian Mountain Club's 1916 August Camp was too providential to be lost.

Our camp was on the north shore of Chimney Pond, a few rods back from the beach. The cliffs towered above us for over 2000 ft., to the Cairn on the summit of West Monument Peak, an impressive and awe-inspiring spectacle. During the whole trip, a well-thumbed copy of that *Rhodora* enabled us to follow the various activities of the Kennedy party. Camp Kennedy, close to our camp, was practically in ruins, and helped to heat our cooking-fires, but it was most entertaining to find everything just as it had been described.

It was also interesting to note the differences caused by the season, as they were there early in July when the water was high; in late August the "bog around the edge of the pond" was practically dry, with a beach of loose stones and boulders all the way around. The "brook by the camp" was also a delusion. They had rain every day, we had no regular rainy day, and

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*For a complete list of botanical papers written by Rev. E. J. Hill, 162 titles, see an article by Miss Chase in *Rhodora* **19:** 61–69. April, 1917.

only once was any party soaked bya shower. The weather for the first few days was excessively hot and smoky, and everything around the camp was so dry that the fire committee said that we were living in a powder-keg, and issued strict rules about the use of fire in the camp.

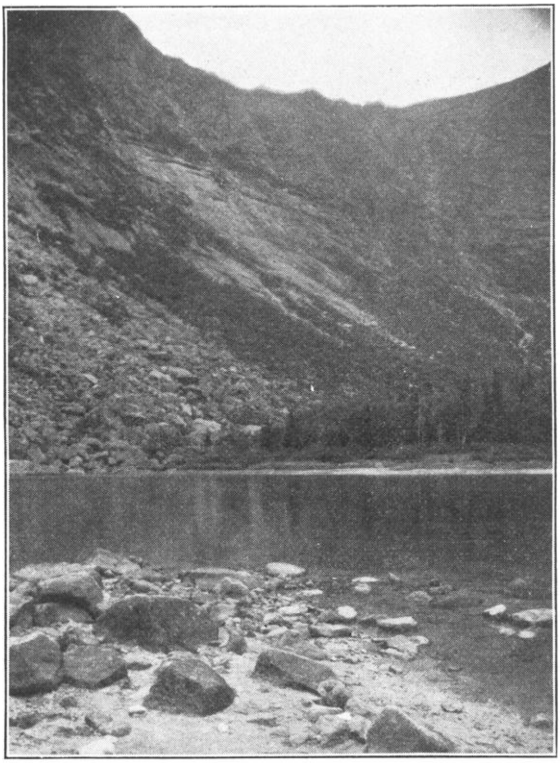

FIG. 1.—Chimney Pond from the Appalachian Mountain Club camp. Photo by Mr. Parker B. Field.

Chimney Pond was the only water-supply, and the farthest corner was assigned as a bathing and laundry place, and the water thereof was aptly described by Judge Churchill as "alpine." Camp was run on a daylight-saving schedule, breakfast being at 6, lunch at 11, dinner at 5. Darkness by 7, and bed very shortly thereafter.

The writer served as camp botanist, and while not paying sufficient attention to the flowering plants to collect any properly, only bringing out a small bale of hay, without pressing, managed to check off at least half of those on Mr. Fernald's list. Hepaticae received the most attention, and the mosses some slight amount, and this often hastily, as there was little time for collecting with a large party, while en route. Chimney Pond had the most careful exploration at odd times about the camp, and yielded the majority of the novelties.

The writer did no collecting on the first day's trip in as far as Cushman's Camp, on beautiful Ktaadn Lake. On the way up to Camp, however, the next day, one crossing of Ktaadn Brook was full of fine *Jungermannia cordifolia* Hook. On examining the pond shore near the camp, the most conspicuous species were

Pellia epiphylla (L.) Corda, and a large and luxuriant *Fossombronia*, without mature capsules, probably *foveolata*, *Marsupella emarginata* (Ehrh.) Dum., all sizes, *Nardia Geoscyphus* (De Not.) Lindb., new to Maine, in the peaty corners of the sedge tufts, mixed with *Lophozia inflata* (Huds.) Howe, and *L. alpestris* (Schleich.) Evans. This latter was collected new to Maine by Mr. Collins in 1900 because he could not help it, being as it is the dominant *Lophozia* of the region, and occurring in 57 varieties.

A preliminary circuit of the pond produced *L. Kunzeana* (Hüben.) Evans, also new to Maine, on the big boulder-talus at the southeastern end of the pond, also *Diplophylleia taxifolia* (Wahl.) Trev., *Lophozia Hatcheri* (Evans) Steph., *L. lycopodioides* (Wahl.) Cogn., *Rhytidium rugosum* (Ehrh.) Kindb. This latter was the only moss noted by the writer which was not on Dr. Kennedy's list.

On the peat among the cranberries along the camp side of the pond was more *L. Kunzeana* (Hüben) Evans, this habitat, on *Sphagnum*, being its usual one in the White Mts. Nearby, on the edges of the peat and pond, were *Marsupella ustulata* (Hüben.) Spruce, and *Cephaloziella Starkei* (Funck.) Schiffn., this latter also new to Maine.

Along the southwestern shore was first, plenty of *L. confertifolia* Schiffn. on small boulders at the edge of the woods. Further on, one was curiously reminded of Lower Greeley Pond, Waterville, N. H., with its pebbly peaty shore supporting a mixed turf of *Marsupella emarginata* (Ehrh.) Dum., *M. Sullivantii* (De Not.) Evans, *Nardia obovata* (Nees.) Carringt.,*Lophozia alpestris* (Schleich.) Evans, *L. inflata* (Huds.) Howe, *Odontoschisma elongatum* (Lindb.) Evans, *Scapania dentata* Dum., *S. subalpina* (Nees.) Dum., etc. A delightful little beach bore above highwater mark a garden of hare bells, *Aster Radula* Ait., alpine *Solidago*, and *Arenaria groenlandica* Spreng., with alpine grasses and sedges. The ground beneath was covered with a mixture of *Cephaloziella Starkei* (Funck.) Schiffn., *Cephalozia bicuspidata* (L.) Dum., 3 species of *Marsupella*, small tufts of *Scapania subalpina* (Nees.) Dum., *S. dentata* Dum., *S. irrigua* (Nees.) Dum., and even an occasional tumbledown bit of *Gymnomitrium concinnatum* (Lightf.) Corda. from the heights above. *Marsupellae* were in assorted sizes; some of the *Sullivantii* was almost robust enough for *sphacelata*, but was on the beach and not in the water.

Following up the dry brook at the southwest corner of the pond were more *Marsupellae*, *Nardia obovata*, *Dicranum longifolium* Ehrh., *Andreaea petrophila* Ehrh., and a few bits of *Frullania Oakesiana* Aust. on the larger birches. Our first official expedition was up this brook via the slide to the mouth of the Chimney, which contained a rivulet, but nothing particularly exciting in the way of hepatics.

Our usual route up the mountain, taking about an hour and a half from camp on to the Tableland, was via a slide just south of the Saddle Slide used by the Kennedy party, as that was too much overgrown. A cold spring near the top of this slide was the only water-supply on the mountain (barring the Abol spring) except certain dubious rain-pools in the rocks. The Tableland itself (about 4300 ft.) is very dry and barren, with a markedly acid-soil flora. *Dia-*

pensia, *Salix Uva-ursi* Pursh, *Vaccinium uliginosum* L., *Rhododendron lapponicum* Wahl., *V. Vitis-Idaea* L., *Lycopodium Selago* L., *L. annotinum* L., var. *pungens*, *Ptilidium ciliare* (L.) Nees., *Rhacomitrium lanuginosum* (Hedw.) Brid., *Ptilium Crista-castrensis* (L.) De Not., *Hypnum Schreberi* Willd., with balsam scrub, comprised the flora at first glance. "Our little Labrador" some one called it. The caribou have all moved further north; of the herd of 80 formerly inhabiting the tableland, the last one was seen there in 1908.

The whole top of the mountain is much more barren than the Presidential Range at similar altitudes, in fact, it more resembles the cone of Washington. There are very few little damp *Sphagnum* holes, or permanent rivulets, like those at the head of Tuckerman's. The west side of West Monument Peak has little glades full of vegetation, but nothing as good as the Alpine Garden.

Once on the Tableland, the peaks were a mere amble. The writer made four ascents, which was about the average. The hepaticae up above were mainly *Gymnomitrium concinnatum* (Lightf.) Corda., *G. corallioides* Nees, new to Maine (only one bit collected), *Temnoma setiforme* (Ehrh.) Howe, *Lophozia attenuata* (Mart.) Dum., *L. Hatcheri* (Evans) St., *L. lycopodioides* (Wallr.) Cogn., largely *var. obliqua* K. M., *L. Kunzeana* (Hüben.) Evans, *Cephalozia bicuspidata* (L.) Dum., *Diplophylleia taxifolia* (Wahl.) Trev.

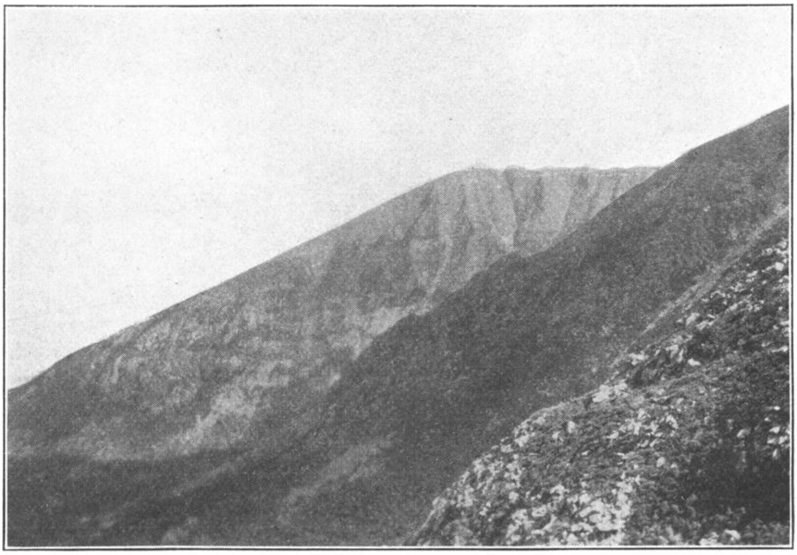

FIG. 2.—Pomola and Chimney Pond (lower left-hand corner) from top of Saddle Slide. Photo by Mr. W. H. Dawson..

Of the mosses, besides those mentioned above, there occurred *Dicranum elongatum* Schwaegr., *Grimmia Doniana* Sm., *Conostomum boreale* Swz., *Poly-*

trichum strictum Banks. There was on the Tableland no bare peaty ground like that along the Carriage Road and about the Lakes of the Clouds.

The party went over to the North Basin one afternoon, but penetrated only as far as the pond across its mouth, as the clouds were down to the floor of the Basin. It was primarily a blueberrying expedition, as we had to cross a big brûlée, or dri-ki, as they are called up there, which had been made since the Kennedy expedition. All through this the ground was carpeted with *Cephaloziella bifida* (Schreb.) Schiffn., new to Maine. The pond was very low, surrounded by scrub and very poor hepatic pickings, only a few bits of *Plagiochila*, *Scapania*, etc. So the writer had not the opportunity of examining the head-wall of the Basin, which was recommended by the Kennedy party as affording some of the best collecting in the region.

One of the most attractive of the many places upon which the writer would have liked to have spent more time was the long steep eastern slope of Pomola, as all the plants thereon looked less stunted and more luxuriant than those upon the Tableland.

The knife-edge, from Pomola to West Monument Peak, while extremely entertaining, was as dry as the brick wall it much resembles in places. The upper 700 ft. of the mountain, from above the grey granite of the Tableland, are of a pink granite like that of Chocorua. It is fairly covered with small crustose lichens, one black, and one "greenery-yallery." This latter is *Buellia geographica* (L.) Th. Fr., a species confined to granite rocks, and equally abundant upon Mt. Washington. The color effect of the rocks is consequently grey, except when close to them.

At the top of the Chimney was a little more vegetation, including some good *Rhytidium rugosum* (Ehrh.) Kindb.

From the summit we had observed a small pond in the South Basin, northwest of Chimney Pod, and some of the men started a trail thereto. As the trail reached there only eventually, it was christened Lost Pond, and proved to be a most attractive little place, with a new and striking view of the great cliffs. Here again the water was low, with peaty banks, with a fine mixture of *L. longiflora* (Nees) Schiffn., *L. Kunzeana* (Hüben.) Evans, *L. inflata* (Huds.) Howe, *Mylia anomala* (Hook.) S. F. G., *Cephalozia bicuspidata* (L.) Dum., *C. Francisci* (Hook.) Spruce, &c. This was our last official expedition, as camp broke up on August 31, and we left Staceyville on the sleeper September 2.

Mr. Collins's sketch-map in the old *Rhodora* was the most accurate that we had in camp. He had not, however, indicated the two great basins on the west side of the mountain, known as Klondike and Northwest, owing to lack of clear views while he was on Ktaadn.

In a cold brook not far below the Pomola trail was much excellent *Scapania dentata* var. *speciosa* (Nees) K. M. A little farther down, above Depot Pond, was an old bog, of perhaps an acre, full of *Mylia anomala*, *Lophozia marchica* (Nees) St., *Lepidozia setacea* (Web.) Mitt., *Cephalozia macrostachya* Kaal., *C. fluitans* (Nees) Spruce, besides many attractive sedges. In the buck-board road at Dacey's Dam were a few bits of *Ricciella Sullivantii* (Aust.) Evans, besides much *Anthoceros laevis* L. Along the wet clayey road between Lunkasoo and Staceyville there were unlimited quantities of *A. Macounii* Howe.

Of former additions to the Maine hepatic list first collected on Ktaadn., E. D. Merrill, in 1898, got *Scapania convexula*, described as new by Müller.*

Mr. Collins, in 1900, found *Gymnomitrium concinnatum* (Lightf.) Corda, *Nardia obovata* (Nees) Carringt., *Lophozia barbata* (Schmid.) Dum., *L. lycopodioides* (Wallr.) Cogn. (new to New England), *L. alpestris* (Schleich.) Evans, and *Scapania umbrosa* (Schrad.) Dum.

The Cowles party, in 1902, working in the North-West Basin, acquired *Marsupella aquatica* (Lindenb.) Schiffn., *Lophozia confertifolia* Schiffn., (new to North America) and *Ptilidium pulcherrimum* (Web.) Hampe.

Dr. Evans, in 1908, in an ascent via the Abol Slide, collected *Marsupella ustulata* (Hüben.) Spruce, and *Lophozia bicrenata* (Schmid.) Dum.

The writer, in 1916, added *Gymnomitrium corallioides* Nees, *Nardia Geoscyphus* (De Not.) Lindb., *Lophozia Kunzeana* (Hüben.) Evans, *Cephaloziella bifida* (Schreb.) Schiffn. and *C. Starkei* (Funck) Schiffn.

Some notes on the species either lacking, or overlooked, may be of interest. The writer collected all the hepaticae on Mr. Collins's list, with the exception of *Scapania umbrosa* (Schrad.) Dum. Of the two closely related *Sphenolobi*, everything collected was *exsectaeformis* (Breidl.) Steph. No *Lophozia longidens* (Lindb.) Macoun was noted, and no *Scapania nemorosa* (L.) Dum.

Marchantiaceae were entirely lacking until well down the trail, and then mainly *Conocephalum*. *Lophozia lycopodioides* (Wallr.) Cogn., while abundant and typical about the camp, was inclined to be var. *obliqua* K. M., up above. *Cephaloziella* species were less numerous than in the White Mts. No *Porella* or *Radula* was collected by the writer.

A more leisurely survey of the mountain is necessary than that which the writer was enabled to bestow upon it during her ten-days' stay, but it would undoubtedly yield many species, including some more denizens of a distinctly arctic character, besides those already upon our list.

The attention of collectors is called to this mountain, a New England—No! a National asset, as yet unrealized by the majority of our fellow-citizens—Ktaadn the Magnificent! far to the north of Boston!

HARTFORD, CONNECTICUT,
DECEMBER, 1916

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* A quantity of Mr. Merrill's bryophytes, presumably from the same expedition, now in the hands of Dr. Riddle, may prove to contain some of the additional species listed below, in which case they will antedate these records.